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5B089

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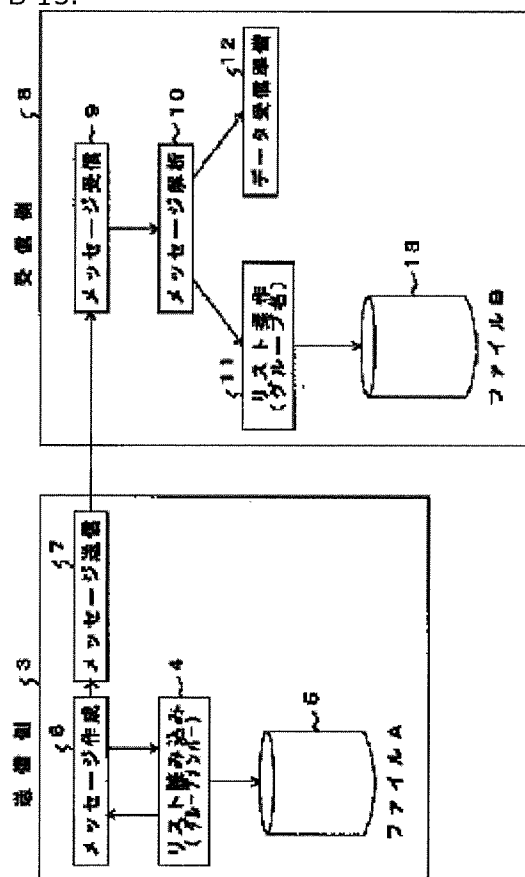
F-term (reference)

5B089 GA21 GB01 JA35 KA04 KB06 KC51 KE07

5K030 HB19 HC01 HC13 LA02 LD04 LD06

Abstract:

PROBLEM TO BE SOLVED: To attain a remote broadcast data communication to a plurality of computers serving as the radio terminals by transmitting the message data from a transmitting computer to a receiving computer. **SOLUTION:** A transmitting computer 3 stores an IP address list of a receiving computer 8 as a file A 5. A message production part 6 reads the file A 5 via a list reading part 4 to produce a read message and transmits it via a message transmitting part 7. A message analyzing part 10 of the computer 8 analyzes the message which is received at a message receiving part 9 and notifies a list operating part 11 of the participating in and the seceding from a broadcast data communication group. The preparation set for the broadcast data communication is notified to a data reception preparing part 12. Then the reception is prepared for the data if the group name the received message is matched with a group name that is stored in a file B 13.

**JPO Machine translation abstract:****(57) Abstract**

SUBJECT An object of this invention in order to make multiple address data communications possible from remoteness to two or more computers which are unmanned terminals is to control execution of a group's formation, disappearance, and multiple address data communications.

Means for Solution Data was transmitted from one certain computer, and in order to make a computer without a help perform simultaneous transmissive communication, it enabled it to control any one of directions in which a group is made to form, directions made to secede from a group, and the directions to which simultaneous transmissive communication is made to carry out.

Claim(s)

Claim 1 In communication between computers connected to a network which can communicate

mutually among two or more computers, In making simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer perform, In order to operate intervention to a group by receiving computer, what made a sequence an identifier of two or more receiving computers in which a group is made to form, and a group name are transmitted from a transmitting computer as one message, When an identifier of a receiving computer corresponds in a sequence of an identifier of a receiving computer in this message in all the receiving computers which received this message, A correspondence procedure which controls a simultaneous transmissive communication group, wherein it stores said group name in this message as an identifier at the time of simultaneous transmissive communication and a receiving computer uses the identifier concerned in future simultaneous transmissive communication.

Claim 2In communication between computers connected to a network which can communicate mutually among two or more computers, In making simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer perform, In order to operate secession from a group by receiving computer, In all the receiving computers which transmitted what was made into a sequence of an identifier of two or more receiving computers which secedes from a group, and a group name from a transmitting computer as one message, and received this message, When an identifier of a receiving computer corresponds in a sequence of an identifier of a receiving computer in this message, A correspondence procedure which controls a simultaneous transmissive communication group, wherein it cancels said stored group name and a receiving computer uses the identifier concerned in future simultaneous transmissive communication.

Claim 3In communication between computers connected to a network which can communicate mutually among two or more computers, When simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer is performed, In order to operate preparation of simultaneous transmissive communication by receiving computer, a group name as an identifier of a group who performs simultaneous transmissive communication is transmitted from a transmitting computer as one message, A correspondence procedure which controls a simultaneous transmissive communication group having compared a group name in this message with a group name stored in a receiving computer, and performing simultaneous transmissive communication in all the receiving computers which received this message when the same.

Claim 4In a recording medium in communication between computers connected to a network which can communicate mutually among two or more computers, In making simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer perform, In order to operate intervention to a group by receiving computer, what made a sequence an identifier of two or more receiving computers in which a group is made to form, and a group name are transmitted from a transmitting computer as one message, When an identifier of a receiving computer corresponds in a sequence of an identifier of a receiving computer in this message in all the receiving computers which received this message, Said group name in this message is stored as an identifier at the time of simultaneous transmissive communication, A recording medium which recorded a program which described a correspondence procedure which controls a simultaneous transmissive communication group, wherein a receiving computer described and records a method which used the identifier concerned in future simultaneous transmissive communication in a form of a program.

Claim 5In a recording medium in communication between computers connected to a network which can communicate mutually among two or more computers, In making simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer perform, In order to operate secession from a group by receiving computer, In all the receiving computers which transmitted what was made into a sequence of an identifier of two or more receiving computers which secedes from a group, and a group name from a transmitting computer as one message, and received this message, When an identifier of a receiving computer

corresponds in a sequence of an identifier of a receiving computer in this message, A recording medium which recorded a program which described a correspondence procedure which controls a simultaneous transmissive communication group, wherein it deleted said stored group name and a receiving computer described and records a method which used the identifier concerned in future simultaneous transmissive communication in a form of a program.

Claim 6In a recording medium in communication between computers connected to a network which can communicate mutually among two or more computers, When simultaneous transmissive communication which receives data simultaneously by two or more computers which transmit data from one certain computer and do not have operation by helps other than said computer is performed, In order to operate preparation of simultaneous transmissive communication by receiving computer, a group name is transmitted from a transmitting computer as one message as an identifier of a group who performs simultaneous transmissive communication, In all the receiving computers which received this message, compare a group name in this message with a group name stored in a receiving computer, and when the same, A recording medium which recorded a program which described a correspondence procedure which controls a simultaneous transmissive communication group describing and recording a method which was made to perform simultaneous transmissive communication in a form of a program.

Detailed Description of the Invention

0001

Field of the InventionThis invention relates to the recording medium which recorded the program which described the correspondence procedure which controls a simultaneous transmissive communication group about the simultaneous transmissive communication between the computers connected to the network which can communicate mutually among two or more computers, and the correspondence procedure concerned.

0002

Description of the Prior ArtIn the computer network in which IP (Internet Protocol) communication is possible mutually among two or more computers, The simultaneous transmissive communication which carries out data transmission from one computer simultaneously to other two or more computers in the IP multicast communication defined by RFC(Request for comments) 1112 is possible. In the simultaneous transmissive communication concerned, it communicates by forming a group.

0003There is MBone as a global experiment network of an IP multicast. In MBone, a sending person forms arbitrary groups and an addressee joins it. An addressee chooses the group of hope for plurality **sending person** . Operation of the addressee in this case is operation by human being using a tool.

0004In the automated unmanned terminal, since there is no operation to an unmanned terminal, operation through a help cannot be performed.

0005

Problem(s) to be Solved by the InventionAt simultaneous transmissive communication like IP multicast communication, although the multiple address data communications to two or more computers are possible, operation of the receiving computer for it needs operation by a help, and cannot perform operation for performing multiple address data communications by computer used as an unmanned terminal. For this reason, multiple address data communications cannot be performed.

0006In order that this invention might be made in view of the above and may make multiple address data communications possible from remoteness to two or more computers which are unmanned terminals, It aims at controlling execution of a group's formation, disappearance, and multiple address data communications, especially performing said control to two or more receiving computers from a transmitting computer, and performing transmitting computer initiative type multiple address data communications.

0007

Means for Solving the ProblemIn order to attain the above-mentioned purpose, message data which directs operation is transmitted to a receiving computer from a transmitting computer, and suppose that a receiving computer is controlled by this data.

0008Operation by receiving computer which received said data is three of preparations of intervention to a group, secession from a group, and multiple address data communications.

0009Drawing 1 shows an example of message data to operation of a receiving computer. An action code is an identification code of a message to operation by receiving computer. The identifier 1 - the identifier n are identifiers which identify a receiving computer uniquely. A group name is a name to a simultaneous transmissive communication group.

0010In a correspondence procedure which controls a simultaneous transmissive communication group of this invention, message data which directs operation of a receiving computer by transmitting computer is created, and it transmits to a receiving computer from a transmitting computer. By receiving computer, operation according to this data is performed after receiving this data. Operation required of a receiving computer is three of preparations of intervention to a group, secession from a group, and multiple address data communications, and equips a function corresponding to three aforementioned operations for a creation function of message data to each operation by receiving computer in a transmitting computer.

0011A means in a receiving computer to said three operations becomes the following.

(1) Compare an identifier of a receiving computer with two or more identifiers in message data after message data reception of intervention to a group, and if an identifier applicable in an identifier sequence in message data exists, store a group name.

(2) An identifier of a receiving computer is compared with two or more identifiers in message data after message data reception of secession from a group, and if an identifier applicable in an identifier sequence in message data exists, a stored group name will be canceled.

(3) After message data reception of multiple address data-communications preparation, if a group name stored in a receiving computer and a group name in message data are the same, preparation of reception of multiple address data communications will be operated.

0012

Embodiment of the InventionHereafter, the example of this invention is described using a drawing.

0013Drawing 2 is a network which can communicate mutually among two or more computers, and is a network in which simultaneous transmissive communication is possible. Numerals 1-i in a figure expresses a computer, and 2 expresses a network. And for example, a communications protocol uses TCP (UDP)/IP, and a simultaneous transmissive communication protocol uses an IP multicast. The details of message data composition of assignment of an action code in drawing 3 are shown in drawing 4.

0014In the message data shown in drawing 1, when an action code is set to "8", it will point to "intervention to a group." What is shown in drawing 4 shows each identifier shown in drawing 1 more to details.

0015In order to check the processing completion of the receiving computer in a transmitting computer, a positive acknowledge is transmitted from a receiving computer. Therefore, the positive acknowledge is added to the message data.

0016The receiving computer was made into the uniquely discriminable IP address as an identifier. In multiple address data-communications preparation, it decided to include as data the service port number which is the information which is needed by the multiple address data communications by an IP multicast, and a group IP address besides a group name. By the message of secession from the intervention/group to a group, it decided to include the number of the IP addresses included. It was made to carry out the termination of the data other than a positive acknowledge by a null character.

0017By transmitting computer, drawing 5 creates a message, and transmits, a receiving computer receives, and a series of operations which perform processing according to this message are shown.

0018The numerals 3 in a figure a transmitting side computer and 4 a list reading part and 5 The file A. 6 -- a message creating part and 7 -- a message transmission part and 8 -- a receiving side computer and 9, as for a message reception part and 10, a message analysis section and 11 express a list final controlling element, 12 expresses a data receiving preparation part, and 13 expresses the file B.

0019Hereafter, operation is explained.

(1) Create each message of message preparing multiple address data-communications preparation,

the intervention to a group, and secession from a group. A multiple address data-communications group forms by one or more receiving computers. Therefore, the IP address list of the receiving computer corresponding to a group name is stored as a file. This file is called the file A.

- the intervention to a group -- when making a required receiving computer participate to a group, store an IP address list of a receiving computer required for the file A. In the message creating part 6, via the list reading part 4, this is read and the message of the intervention to a group is created from the file A.

- When making the receiving computer which had participated in the secession group from a group secede from a group, store in the file A the IP address list of a receiving computer made to secede from a group. In the message creating part 6, via the list reading part 4, this is read and the message of secession from a group is created from the file A.

- When making multiple address data-communications preparation multiple address data communications prepare, create a message using the group name made to prepare, and the service port number corresponding to it and an IP address.

(2) Transmit the message created by the transmitting aforementioned message preparing via the message transmission part 7.

(3) The message which transmitted by the reception aforementioned transmission is received by the message reception part 9.

(4) The message which received by the analysis aforementioned reception is analyzed by the message analysis section 10, It distinguishes to the intervention to a group, secession from a group, multiple address data-communications preparation, and the other thing, in the case of the message of secession from the intervention and the group to a group, notifies at the list final controlling element 11, and, in multiple address data-communications preparation, notifies at the multiple address data receiving preparation part 12.

(5) The intervention/secession to a list operation group serve as operation of storing/deletion of a group name. In this example, the list final controlling element 11 stores a group name in the file B. Therefore, operation of the intervention/secession to a group will perform operation to the file B by the list final controlling element 11.

- If the thing of a receiving computer exists in IP address list of the message to a group which carried out participating reception, store the group name on a message in the file B.

- If the thing of a receiving computer exists in IP address list of the message which carried out secession reception from the group, the group name corresponding to the group name on a message will be deleted from the file B.

- If the group name of the message which carried out multiple address data-communications preparation reception is in agreement with the group name stored in the file B, it will shift to preparation by the preparation part 12 of data receiving.

0020It becomes possible by using the message in this invention as mentioned above, and creating the function in the transmitting computer and receiving computer corresponding to each message to control the group at the time of the simultaneous transmissive communication which is the purpose of this invention.

0021The correspondence procedure mentioned above can be described in the form of a program, and can be recorded on a recording medium. This invention also includes the recording medium concerned.

0022

Effect of the InventionAs explained above, when simultaneous transmissive communication is performed to two or more computers without operation by a help from one computer which it is on computer network according to this invention, The intervention to the group who performs control to a multiple address group, secession from a group, It becomes possible by creating the message to the function of multiple address data-communications preparation, and transmitting to a receiving computer from a transmitting computer as data to control the group at the time of simultaneous transmissive communication to two or more computers without operation by a help.

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communication group about the simultaneous transmissive communication between the computers connected to the network which can communicate mutually among two or more computers, and the correspondence procedure concerned.

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- the intervention to a group -- when making a required receiving computer participate to a group, store an IP address list of a receiving computer required for the file A. In the message creating part 6, via the list reading part 4, this is read and the message of the intervention to a group is created

from the file A.

- When making the receiving computer which had participated in the secession group from a group secede from a group, store in the file A the IP address list of a receiving computer made to secede from a group. In the message creating part 6, via the list reading part 4, this is read and the message of secession from a group is created from the file A.

- When making multiple address data-communications preparation multiple address data communications prepare, create a message using the group name made to prepare, and the service port number corresponding to it and an IP address.

(2) Transmit the message created by the transmitting aforementioned message preparing via the message transmission part 7.

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(5) The intervention/secession to a list operation group serve as operation of storing/deletion of a group name. In this example, the list final controlling element 11 stores a group name in the file B. Therefore, operation of the intervention/secession to a group will perform operation to the file B by the list final controlling element 11.

- If the thing of a receiving computer exists in IP address list of the message to a group which carried out participating reception, store the group name on a message in the file B.

- If the thing of a receiving computer exists in IP address list of the message which carried out secession reception from the group, the group name corresponding to the group name on a message will be deleted from the file B.

- If the group name of the message which carried out multiple address data-communications preparation reception is in agreement with the group name stored in the file B, it will shift to preparation by the preparation part 12 of data receiving.

0020It becomes possible by using the message in this invention as mentioned above, and creating the function in the transmitting computer and receiving computer corresponding to each message to control the group at the time of the simultaneous transmissive communication which is the purpose of this invention.

0021The correspondence procedure mentioned above can be described in the form of a program, and can be recorded on a recording medium. This invention also includes the recording medium concerned.

Brief Description of the Drawings

Drawing 1The example of message data is shown.

Drawing 2The example of the network in which simultaneous transmissive communication is possible is shown.

Drawing 3The example of an action code is shown.

Drawing 4The details of message data composition are shown.

Drawing 5Functional constitution is shown.

Description of Notations

- 1: Receiving computer
- 2: Network
- 3: Transmitting side computer
- 4: List reading part
- 5: File A
- 6: Message creating part
- 7: Message transmission part
- 8: Receiving side computer

9: Message reception part
10: Message analysis section
11: List final controlling element
12: Data receiving preparation part
13: File B

Drawing 1

For drawings please refer to the original document.

Drawing 2

For drawings please refer to the original document.

Drawing 3

For drawings please refer to the original document.

Drawing 4

For drawings please refer to the original document.

Drawing 5

For drawings please refer to the original document.

For drawings please refer to the original document.
